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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Sun-Chung Chen

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EXAMINER

FRANKLIN, RICHARD B

ART UNIT

PAPER NUMBER

2181

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/824,386	Applicant(s) CHEN, SUN-CHUNG	
	Examiner Richard Franklin	Art Unit 2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


 FRITZ FLEMING
 SUPERVISORY PATENT EXAMINER
 TECHNOLOGY CENTER 2100
 12/6/2006

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/14/05, 10/23/06.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1 – 18 are pending.

Claim Rejections - 35 USC § 112 1st Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 – 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1 and 11 recite the limitation “at least one network packet having a plurality of data sections correspondingly ***storing*** the local electrical signals” (emphasis added). This limitation is not supported by the specification in such a way as to enable one skilled in the art to which it pertains, to make and/or use the invention. The “Authoritative Dictionary of IEEE Standards and Terms” defines a “packet” as a collection of bits that are transmitted together. A packet does not have a medium to store data. The specification has not shown a packet with a medium to store data. Applicant possibly intended to claim, “at least one network packet having a plurality of data sections correspondingly ***encoded to represent*** the local electrical signals” (emphasis added).

Claim Rejections - 35 USC § 112 2nd Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 – 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 1 and 11 recite the limitation “at least one network packet having a plurality of data sections correspondingly **storing** the local electrical signals” (emphasis added). It is not clear what applicant has intended the word “storing” to mean in light of the 35 USC 112 1st Paragraph rejection above.

The Examiner has interpreted the limitation to mean, “at least one network packet having a plurality of data sections correspondingly **encoded to represent** the local electrical signals” (emphasis added).

5. Claim 1 recites the limitation “**the network device** of another KVM switch” (emphasis added) in lines 11 and 12 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The Examiner has interpreted the limitation as referring to “**a network device** of another KVM switch” (emphasis added).

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6. Claim 1 recites the limitation "**the network packet** transmitted from said another KVM switch" (emphasis added) in lines 13 and 14 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The Examiner has interpreted the limitation as referring to "**a network packet** transmitted from said another KVM switch" (emphasis added).

7. Claim 2 recites the limitation "**the network packet**" (emphasis added) in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim. It is unclear if applicant is referring to the network packet generated in claim 1 or the network packet transmitted from said another KVM switch in claim 1.

The Examiner has interpreted the limitation to refer to the network packet generated in claim 1.

8. Claims 4 and 5 recite the limitation "**the network device**" (emphasis added) in line 1 of each claim. There is insufficient antecedent basis for this limitation in the claims. It is unclear if applicant is referring to the network device of the KVM switch in claim 1 or the network device of the another KVM switch in claim 1.

The Examiner has interpreted the limitation to refer to the network device of the KVM switch in claim 1.

9. Claim 5 recites the limitation "**the second port**" (emphasis added) in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The Examiner is unable to determine what Applicant is trying to claim, and therefore has not treated claim 5 further on the merits.

10. Claim 11 recites the limitation "**the path destinations**" (emphasis added) in lines 5 and 6 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The Examiner has interpreted the limitation to refer to a general "path destination."

11. Claim 11 recites the limitation "**the KVM switches**" (emphasis added) in line 11 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The Examiner has interpreted the limitation as referring to "KVM switches" (emphasis added).

12. Claim 11 recites the limitation "**the network packet** transmitted from another KVM switch" (emphasis added) in lines 13 and 14 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The Examiner has interpreted the limitation as referring to "**a network packet** transmitted from another KVM switch" (emphasis added).

13. Claims 12 and 17 recite the limitation "**the network packet**" (emphasis added) in line 1 of each claim. There is insufficient antecedent basis for this limitation in the

claims. It is unclear if applicant is referring to the network packet generated in claim 11 or the network packet transmitted from said another KVM switch in claim 11.

The Examiner has interpreted the limitation to refer to the network packet generated in claim 11.

14. Claim 14 recites the limitation "***the same network packet***" (emphasis added) in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The Examiner is unable to determine what Applicant is trying to claim, and therefore has not treated claim 14 further on the merits.

15. Claim 14 recites the limitation "***the same KVM switch***" (emphasis added) in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The Examiner is unable to determine what Applicant is trying to claim, and therefore has not treated claim 14 further on the merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 1, 3, 6 – 11, 13, and 16 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2003/0131127

(hereinafter King) in view of US Patent Application Publication No. 2005/0063108 (hereinafter Voll).

As per claim 1, King teaches a KVM switch (King; Figure 1 Items 12 – 15) for a plurality of local (King; Figure 1 Items 71 – 78) and remote computers (King; Figure 1 Items 81 – 88, 91 – 98, and 101-108) to share a plurality of local manipulating devices (King; Figure 1 Items 24 and 32), the KVM comprising a plurality of first interfaces (King; Figure 2 Items 211 and 212), which connect to the local manipulating devices to receive a plurality of local electrical signals; a plurality of second interfaces, which connect to the local computers (King; Figure 2 [Interfaces between Items 221 and 71 and Items 228 and 78]); and a switch device (King; Figure 2 Item 232), which transmits the local and remote electrical signals to the second interfaces. King also teaches communicating with a remote KVM to allow a local user to select any local or remote computer (King; Paragraph [0026]).

King does not teach a packet encoding device, which generates at least one network packet having a plurality of data sections correspondingly storing the local electrical signals received by the first interfaces according to the local electrical signals; a network device, which communicates with a network device of another KVM switch using a network protocol in order to transmit the network packet and to receive the network packet transmitted from the another KVM switch; and a packet decoding device, which obtains at least one remote electrical signal from the network packet of the another KVM switch.

However, Voll teaches a KVM extender that includes a packet encoding device (Voll; Figure 5 Item 565), which generated at least one network packet having a plurality of data sections correspondingly storing the local electrical signals received by the first interface according to the local electrical signals (Voll; Paragraph [0042]); a network device (Voll; Figure 5 Item 131), which communicates with a network device of another KVM switch using a network protocol in order to transmit the network packet and to receive a network packet transmitted from the other KVM switch (Voll; Paragraph [0045]); and a packet decoding device (Voll; Figure 6 Item 665), which obtains at least one remote signal from the network packet of the other KVM switch (Voll; Paragraph [0050]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of King to include the packet encoding and decoding because doing so allows for a device and switch to be located in separate rooms (Voll; Paragraph [0040]).

As per claims 3 and 13, King also teaches wherein the local electrical signals contain a keyboard and a mouse signal (King; Figure 1 Items 24 and 32).

As per claims 6 – 7 and 16, King in combination with Voll obviously teaches that the first and second interfaces contain UARTs and half-duplex communication processors because UARTs and half-duplex communications are well known in the art of data communications.

As per claim 8, Voll also teaches wherein the packet encoding device contains a CPU (Voll; Figure 5 Item 565).

As per claim 9, Voll also teaches wherein the packet decoding device contains a CPU (Voll; Figure 6 Item 665).

As per claim 10, King teaches wherein the switch device contains a CPU (King; Figure 2 Item 215).

As per claim 11, King teaches a computer switching method for a plurality of local (King; Figure 1 Items 71 – 78) and remote computers (King; Figure 1 Items 81 – 88, 91 – 98, and 101-108) to share a plurality of local manipulating devices (King; Figure 1 Items 24 and 32), the method comprising the steps of receiving a plurality of local electrical signals transmitted from the local manipulating devices (King; Figure 1 Items 24 and 32); distributing the local electrical signals in such a way that when the path destinations of the local electrical signals are the local computers, the local electrical signals are transmitted to the local computers (King; Paragraph [0030]); establishing communications among the KVM switches using a network protocol in order to transmit electrical signals to other KVM switches connected to the remote computers and to receive a network packet transmitted from another KVM switch (King; Paragraph [0032]). King also teaches connecting multiple KVM switches together and being able

to control a computer from a mouse and keyboard not located on the same switch as a desired computer (King; Paragraph [0026]).

King does not teach that when the path destinations of the local electrical signals are the remote computers, at least one network packet having a plurality of data sections correspondingly storing the local electrical signals is generated; obtaining at least one remote electrical signal from the network packet transmitted from the other KVM switch; and transmitting the remote electrical signal to the local computer of their destination.

However, Voll teaches a KVM extender that when the path destinations of the local electrical signals are the remote computers, at least one network packet having a plurality of data sections correspondingly storing the local electrical signals is generated (Voll; Paragraph [0042]); obtaining at least one remote electrical signal from the network packet transmitted from another KVM switch (Voll; Paragraph [0050]); and transmitting the remote electrical signal to the local computer of their destination (Voll; Paragraph [0050]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of King to include the packet encoding and decoding because doing so allows for a device and switch to be located in separate rooms (Voll; Paragraph [0040]).

As per claim 17, Voll also teaches wherein the network packet uses a CPU (Voll; Figure 5 Item 565 and Figure 6 Item 665) to perform encoding and decoding.

As per claim 18, Voll also teaches wherein the local and remote electrical signals are switched by a CPU according to a path selection setting (Voll; Paragraph [0036]).

17. Claims 2, 4, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. 2003/0131127 (hereinafter King) in view of US Patent Application Publication No. 2005/0063108 (hereinafter Voll) and further in view of US Patent No. 6,567,869 (hereinafter Shirley).

As per claims 2 and 12, King in combination with Voll teaches the system and method as described in claims 1 and 11 (See rejection of claims 1 and 11 above).

King in combination with Voll does not teach wherein the network packet has a network overhead section.

However, Shirley teaches a KVM switch that communicates using packets. The packets have a header section (Shirley; Col 3 Lines 19 – 24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of King in combination with Voll to include the network overhead section because doing so allows for identification of the recipient of the communication (Shirley; Col 3 Lines 19 – 24).

As per claim 4, King in combination with Voll teaches the system as described in claim 1 (See rejection of claim 1 above).

King in combination with Voll does not teach wherein the network device contains a NIC, which connects to the packet encoding and decoding device; and a network switch, which has a first, second, and third port; wherein the first port connects to the NIC, and one of the second and third port connects to another KVM switch.

However, Shirley teaches a KVM with a NIC (Shirley; Figure 7 Item 300, Col 4 Lines 55 – 57); and a network switch (Shirley; Figure 9 Item 300), which has a first (Shirley; Figure 9 Item 200), second, and third port (Shirley; Figure 9 [Ports connected to lines 76, 78, and 80]); wherein the first port connects to the NIC, and one of the second and third port connects to another KVM switch (Shirley; Figure 9 Item 74).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of King in combination with Voll to include the NIC because doing so allows for communication with other Ethernet devices (Shirley; Col 3 Lines 19 – 24).

As per claim 15, King in combination with Voll teaches the method as described in claim 11 (See rejection of claim 11 above).

King in combination with Voll does not teach wherein the communication among the KVM switches is achieved using a network interface chip (NIC) and a network switch configured for each KVM switch.

However, Shirley teaches a KVM using a NIC (Shirley; Figure 7 Item 300, Col 4 Lines 55 – 57) in a network switch (Shirley; Figure 7 Item 200).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of King in combination with Voll to include the NIC because doing so allows for communication with other Ethernet devices (Shirley; Col 3 Lines 19 – 24).

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent Application Publication No. 2002/0143996 – Teaches connecting server KVMs over a network.
- US Patent No. 6,671,756 – Teaches connecting multiple KVM switches together to expand the possible number of attached computers.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Franklin whose telephone number is (571) 272-0669. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fritz Fleming can be reached on (571) 272-4145. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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